



Monthly Energy Intelligence

August 2020

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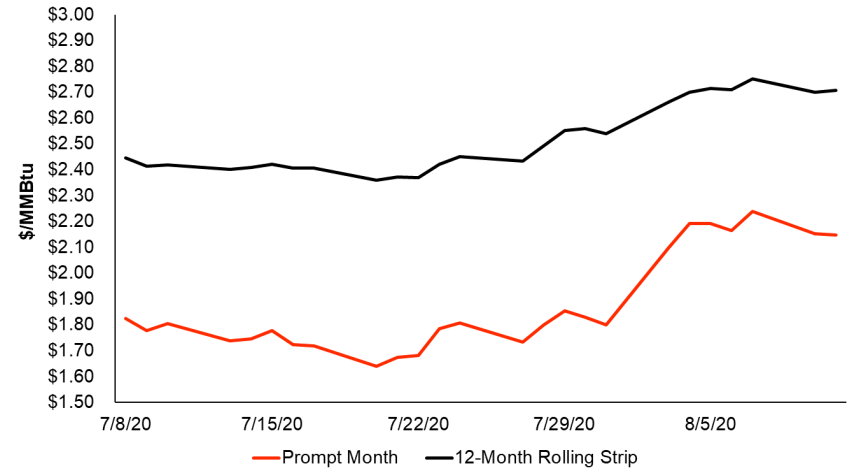
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Natural Gas

- The August 2020 NYMEX natural gas contract expired at \$1.85 per MMBtu, up \$0.35 per MMBtu from the expiration for July. Prices have generally been in the \$1.60 to \$1.90 range since January, but now have surged to ~\$2.15 at time of writing.
- The EIA reported that gas production was at 86.80 Bcf/d for the month of July, compared to 94.4 Bcf/d back in February. The EIA now has output falling to the 84.0 Bcf/d mark by the end of this year. This seems a little bearish, however, as higher prices for both oil and gas would likely lead to an uptick in output.
- The EIA reported a total of 204 Bcf of gas was injected into storage for the five weeks ending July 3 to July 31. Inventories now hold a 22.5% surplus to year-ago levels, and are 15.1% above the five-year average. The EIA has the country starting the winter withdrawal season with around 4,000 Bcf in storage, which is well below what some others are forecasting.
- For U.S. natural gas prices, the key bearish factor over the past few months has likely been the collapse in U.S. LNG. Exports in July were just 3.5 Bcf/d, down from over 9.2 Bcf/d back in February. Looking forward however, there is growing optimism that shipments could reach over 6.0 Bcf/d by early fall. And longer term, many are still forecasting that global gas demand could rebound by the end of 2021, potentially putting the U.S. back on track to become the largest seller by 2025.
- The EIA reports that U.S. natural gas prices for the first half of 2020 were their lowest since at least 1989, at \$1.80 per MMBtu. Mostly on the back of sinking production, the EIA has prices averaging \$3.25 next year—much higher than some other forecasts.



Prompt-Month vs 12-Month Strip

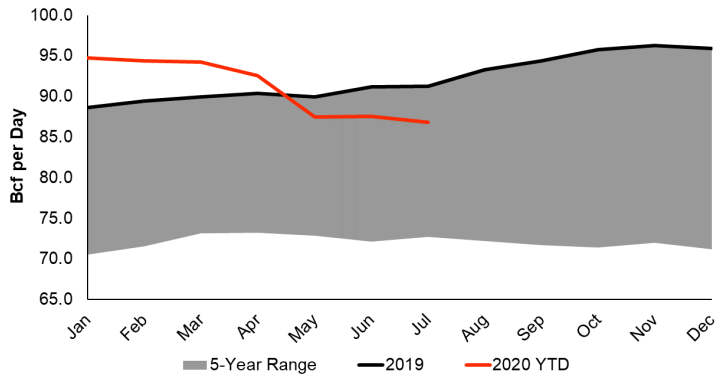
Although up over the first 10 days of August, U.S. gas prices through July traded in the \$1.60 to \$1.90 per MMBtu range. Expectations for much higher prices next year largely depend on a drastic drop in production, a forecast that not all analysts and agencies agree on. In fact, if U.S. oil prices could get back to the \$50 level, a flood of associated gas out of Texas could hit the gas supply system.

ICE, August 2020

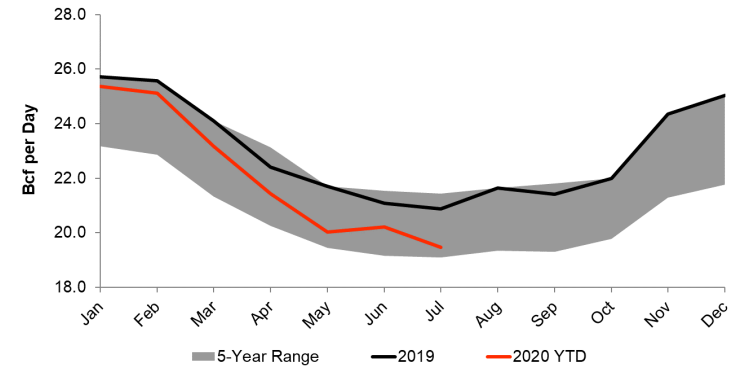


Monthly Data Highlights

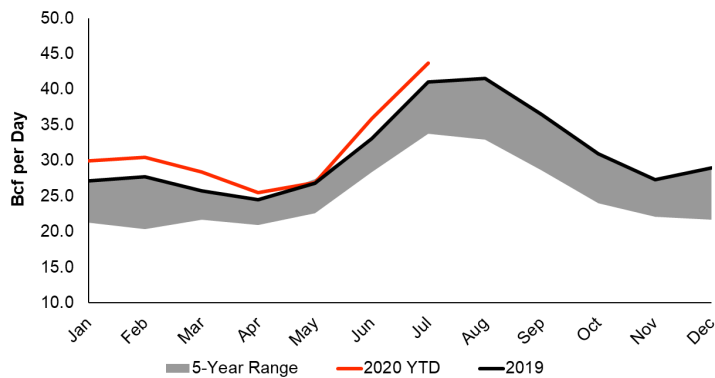
Domestic Natural Gas Production (EIA, August 2020)



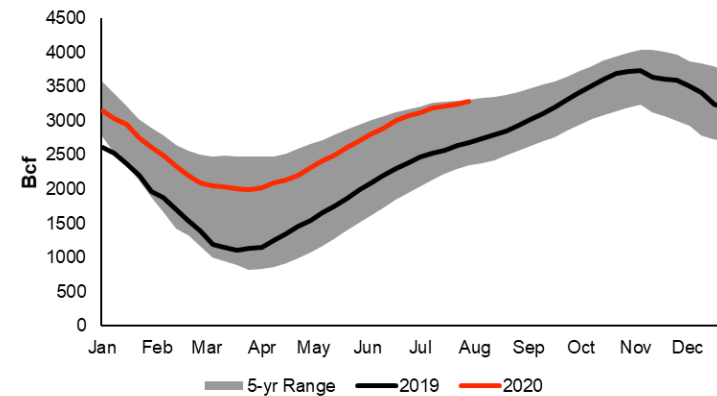
Industrial Natural Gas Demand (EIA, August 2020)



Power Generation Natural Gas Demand (EIA, August 2020)

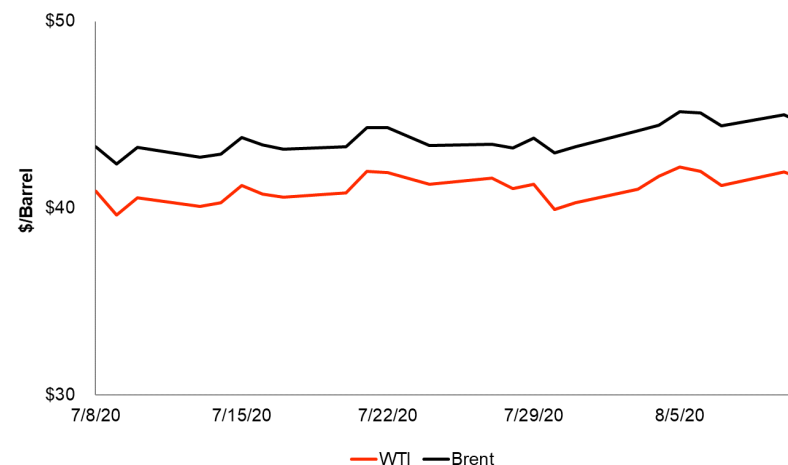


Natural Gas Storage (EIA, August 2020)



Crude Oil & Products

- WTI crude oil ended July at \$40.27 per barrel, up from \$39.27 from where it ended June. Brent crude ended at \$43.52, up from \$41.39 from June's close.
- The EIA put average U.S. crude oil production at 11.1 MMbpd for July, down from 12.75 MMbpd in January. The EIA now sees output staying at current levels for the next several months. Rising oil prices, however, would be a boon for the industry and could potentially bring on more supply than expected.
- For July, U.S. crude storage ended at 519 million barrels, with 20 million barrels pulled during the five weeks ending July 3 to July 31. Overall, U.S. oil demand remains about 5-7% below normal, but rising COVID-19 cases could threaten demand growth.
- U.S. gasoline demand averaged 8.7 MMbpd in July, as compared to 5.85 MMbpd for April. These are rising numbers but still below the 9.5 MMbpd that we typically see for this time of year.
- Jet fuel demand in the U.S., the most disrupted market since the pandemic, is now at 1.1 MMbpd, as compared to 1.85 MMbpd for this time last year. The aviation market is not expected to fully recover here or globally until the second half of next year at the earliest.
- The OPEC+ production cut expired at 9.7 MMbpd at the end of July, now tapering to 7.7 MMbpd. Rising prices, however, encourage members to cheat on their agreements, while also potentially allowing more supply to arise from the Permian in West Texas. For example, \$50 or more oil prices could bring back loads of U.S. output, especially from the smaller, independent producers.



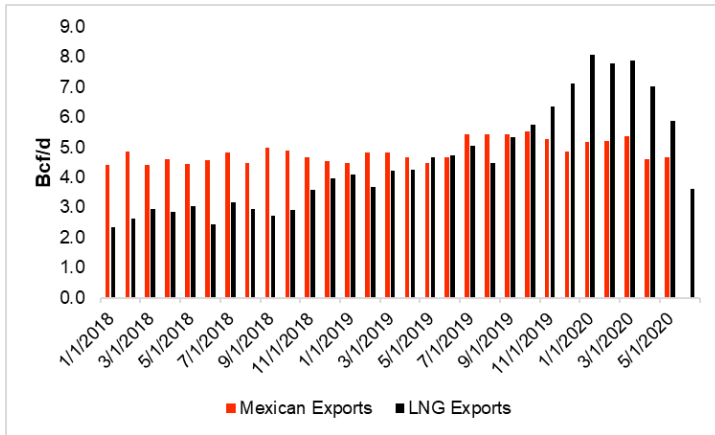
WTI vs Brent Crude Continuation

Oil prices have been relatively stable over the past few weeks as the market appears stuck between still normalizing demand and flat or slightly falling production. The EIA now has U.S. prices averaging nearly \$46 in 2021, which is about \$2 more than the forecast it had in July. The primary concern longer term, however, is that a lack of investment in new supply today could send prices soaring over the next few years—as demand is widely expected to eventually fully rebound.

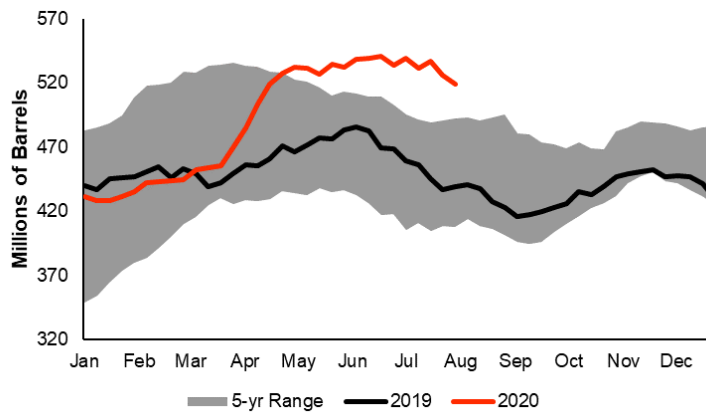
ICE, August 2020

Domestic Inventories

Natural Gas Exports (EIA, August 2020)

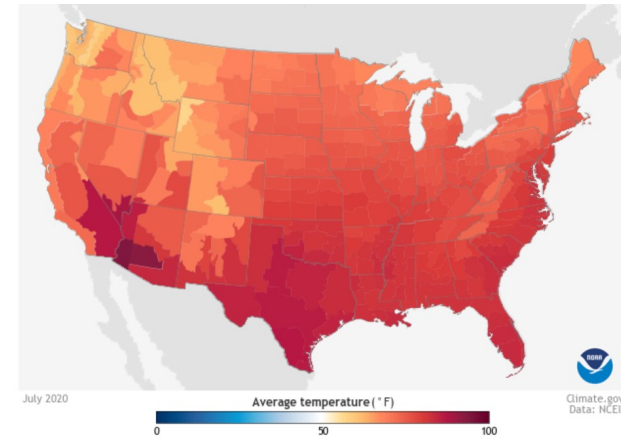


Crude Oil Inventories (EIA, August 2020)

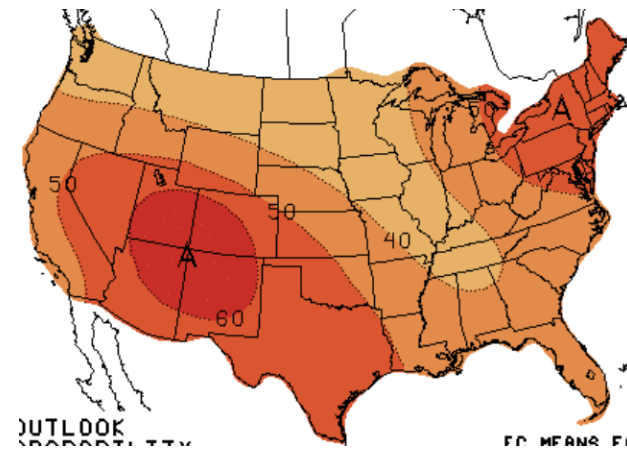


Weather

July 2020 Statewide Average Temperatures Ranks



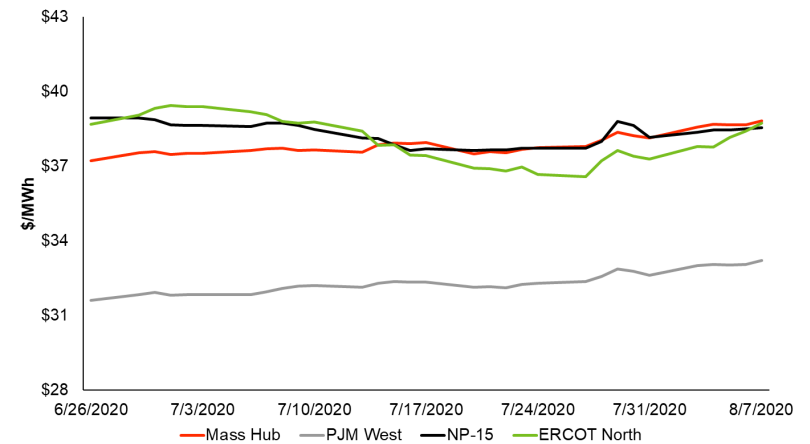
NOAA Three-Month Outlook (Sep-Oct-Nov)





Electric Power

- Released August 11, the EIA's most recent *Short Term Energy Outlook* reports that natural gas generated 46% of U.S. electricity in July, with nuclear second at 19%. Wind was just over 6% of generation, with solar at 3%. July is easily the highest power generation month, hitting nearly 380 TWh this year.
- For January through June, the EIA reports that coal saw the biggest YoY drop this year as compared to 2019. Coal generation declined 30%, with nuclear down 4%, renewables up 5%, and gas generation up 9%. Overall, U.S. power generation has been down 8-10% since the pandemic became a full-scale crisis back in March, as higher residential usage has not compensated for a fall in industrial and commercial needs.
- Latest EIA reporting has U.S. utility-scale battery storage hitting record levels in 2018. In 2010, for instance, the country had seven operational battery storage systems, accounting for 60 MW of power capacity. By 2018, however, this had reached 125 such facilities, with 870 MW of power capacity. CAISO and PJM have accounted for 55% of these additions from 2010 to 2018.
- As compared to 2019, U.S. electricity demand is expected to fall 4% in 2020 due to the pandemic. Most of this will occur in the commercial sector, expected to decline 7-8% for the year. Setting record levels this year, and accounting for 40% of total generation, gas in 2021 could fall to 35% as higher prices lower usage, with wind and solar generation likely making up the difference. In total, U.S. power demand in 2021 is expected to rise just 1%.



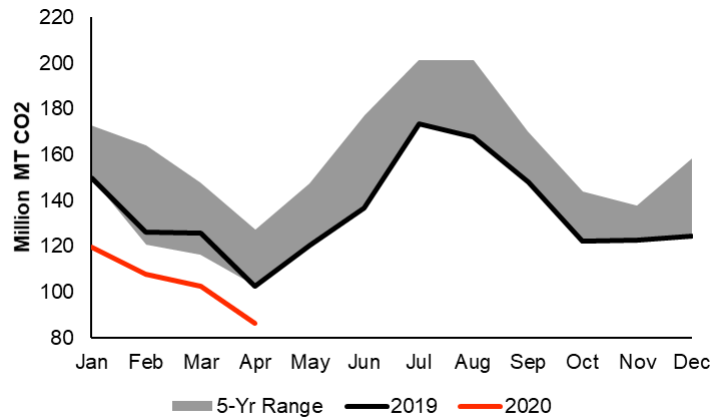
2021 On-Peak Calendar Forward Strip

Power prices have stabilized as U.S. natural gas prices have been range bound, in the \$1.60 to \$1.90 per MMBtu area for many months now. Yet, gas prices have been rising to the \$2.15 mark in the first 10 days of August, a key input fuel that is also working to lift power prices a bit. While there is a downside risk to pricing, the extremely low prices we saw back in April-June are likely behind us for this year and perhaps beyond.

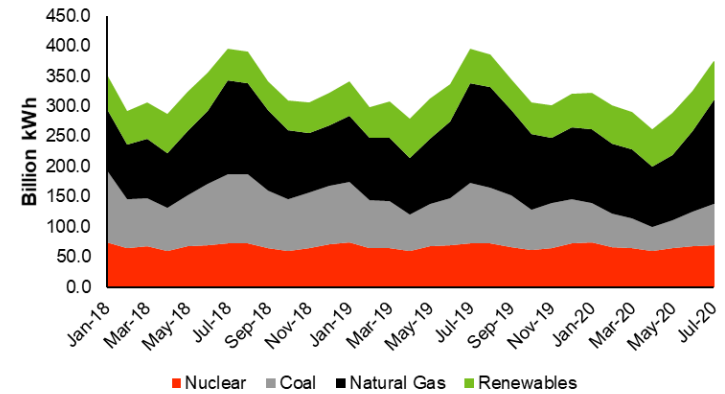
ICE, August 2020

Monthly Power Highlights

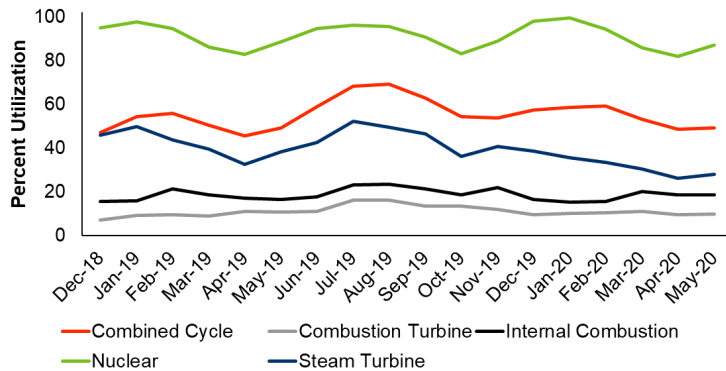
Power Sector CO2 Emissions (EIA, August 2020)



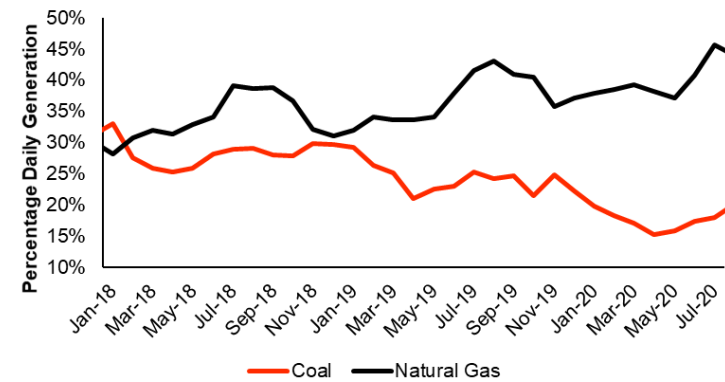
Total U.S. Energy Mix (EIA, August 2020)



Capacity Factors by Technology (EIA, August 2020)

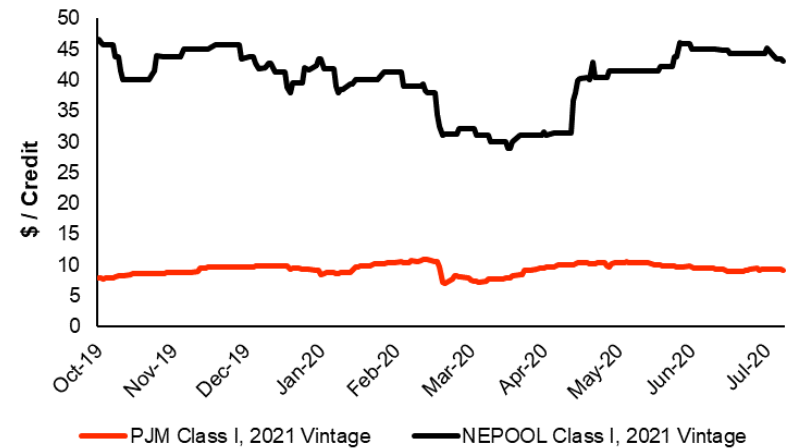


Natural Gas versus Coal Generation (EIA, August 2020)



Renewables / Regulatory

- In its most recent *Short Term Energy Outlook*, the EIA forecasts that renewable generation will account for 20% of total U.S. generation in 2020 and 22% in 2021, topping coal-fired generation in 2020 (18%) and equaling it in 2021 (22%). Renewable generation is also expected to be the fastest-growing generation sector, adding 23.2 GW of wind capacity and 12.9 GW of utility-scale solar generation in 2020. A total of 769 MW of renewable generation was added in June.
- FERC approved a proposal from MISO that will allow energy storage assets to qualify as storage-as-transmission-only (SATOs) assets under certain conditions. The order noted that an asset can only qualify as a SATO if its needed to “resolve a discrete, non-routine transmission need that can only be addressed by an asset under MISO’s control.” Opponents of the order noted that MISO is unfairly being allowed to bypass standard grid interconnection procedures. FERC Commissioner James Danly dissented on the decision, noting how the order blurs the line between generation and transmission facilities.
- FERC recently hosted a day-long conference discussing the importance of hybrid generation resources to the future of the electric grid. Hybrid resources are generating assets that have energy storage paired with them, typically battery storage. These types of assets are seen as key to meeting the growing number of carbon reduction goals across the U.S.
- Offshore wind generation funding surged in the first half of 2020 as \$35 billion was invested in the technology, an increase of 300% spent in the first half of 2019.



Renewable Energy Credit Pricing

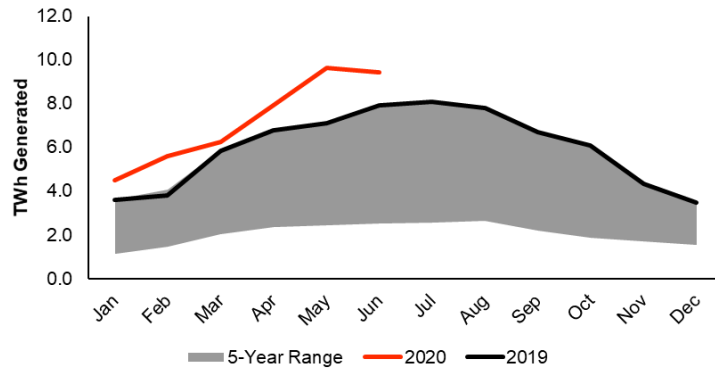
RECs are expected to remain an essential mechanism to comply with clean energy standards within a state. Currently, 29 states have a renewable portfolio standard to meet environmental goals. This has helped create a \$70 billion market for wind, solar and other renewable energy sources though demand destruction due to COVID-19 could impact the value of RECs in the near-term, though 2021 REC pricing is expected to remain strong.

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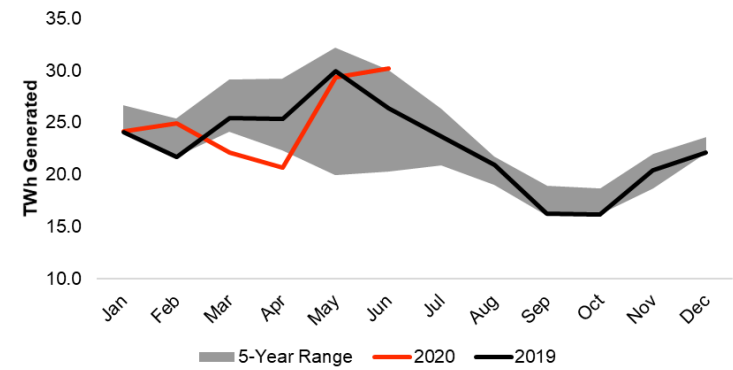


Renewable Highlights

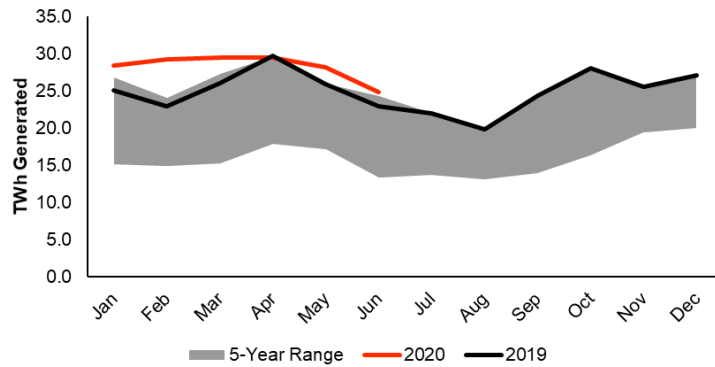
U.S. Solar Generation (EIA, August 2020)



U.S. Hydro Generation (EIA, August 2020)



U.S. Wind Generation (EIA, August 2020)



Renewable Capacity Factors (EIA, August 2020)

